

FIG. 1 (PRIOR ART)

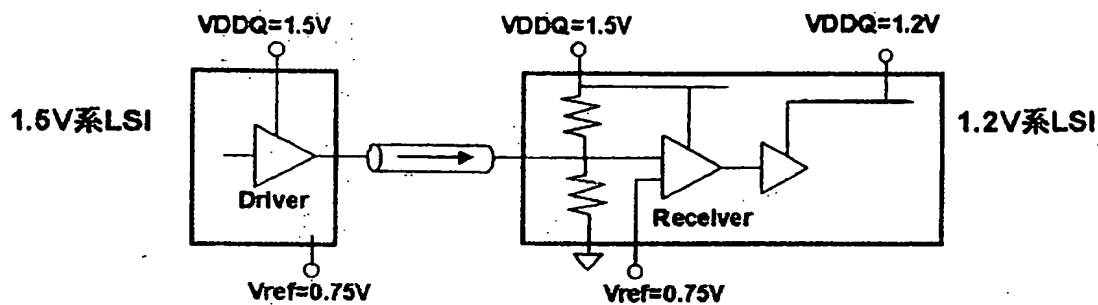


FIG. 2 (PRIOR ART)

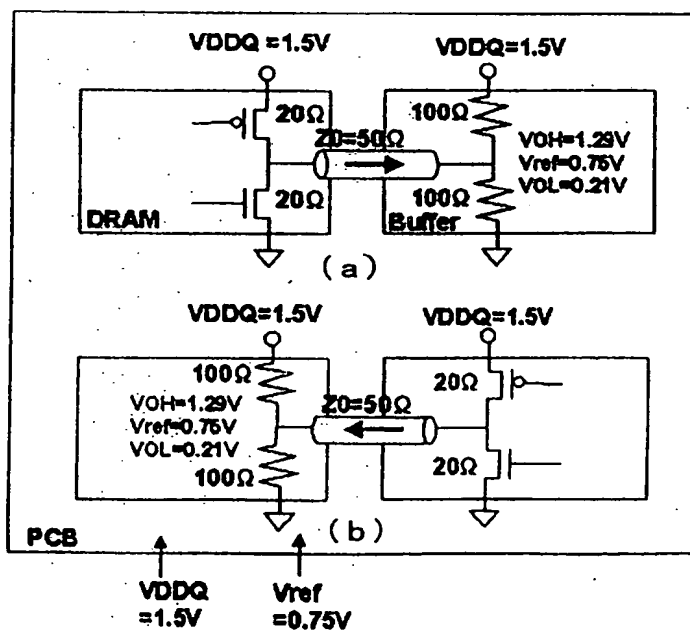


FIG. 3 (PRIOR ART)

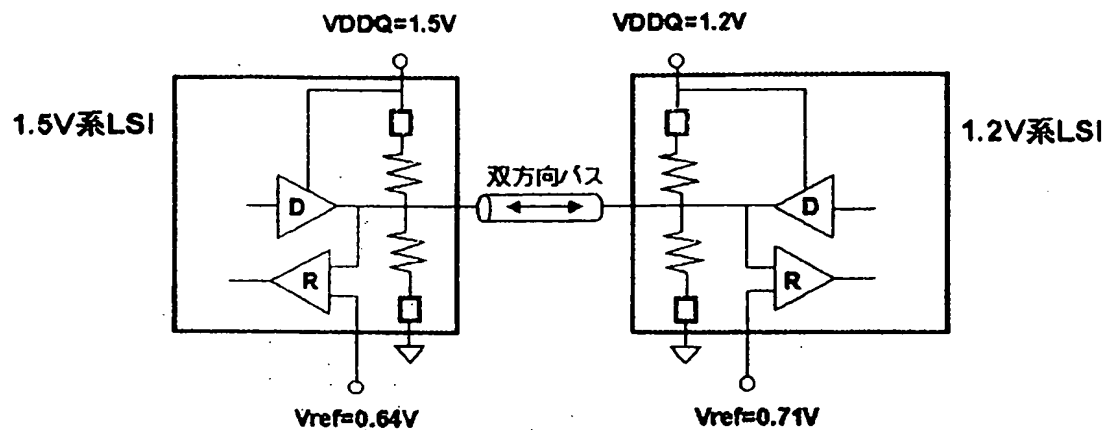


FIG. 4 (PRIOR ART)

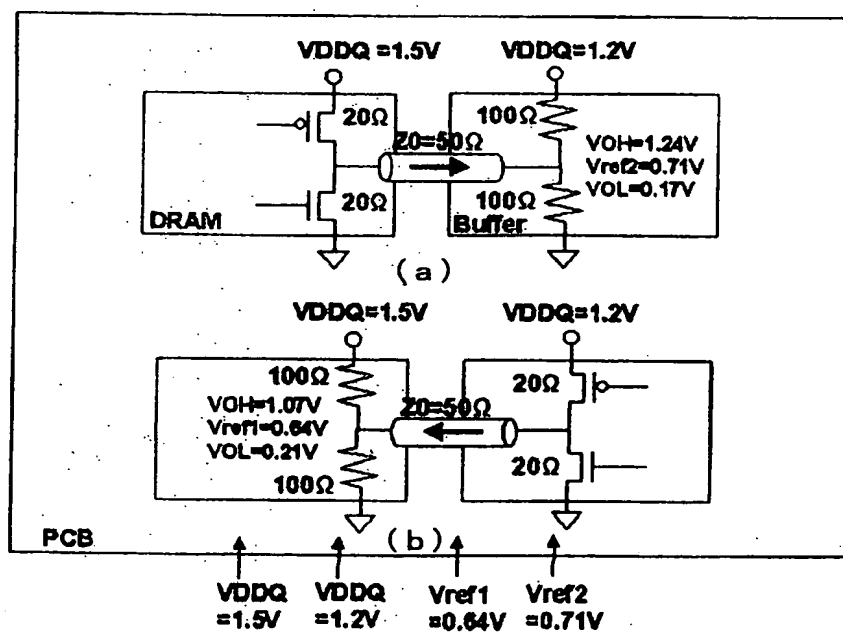


FIG. 5 (PRIOR ART)

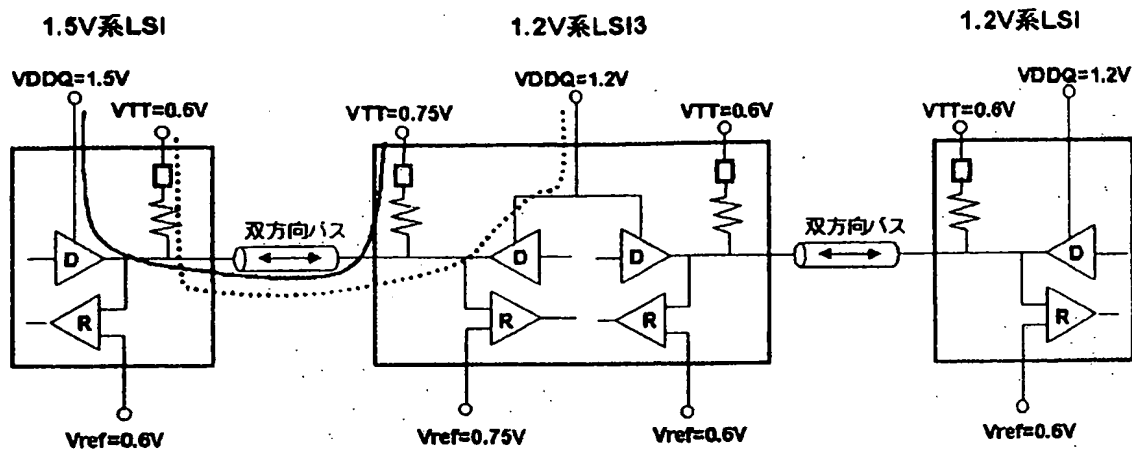


FIG. 6 (PRIOR ART)

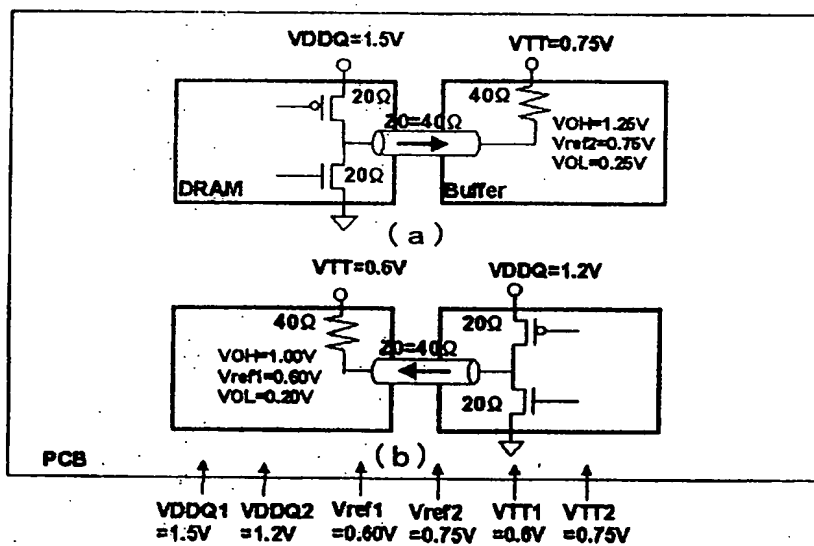


FIG. 7 (PRIOR ART)

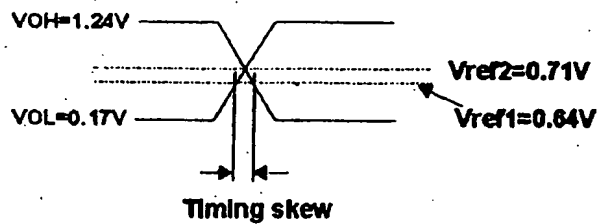


FIG. 8 (PRIOR ART)

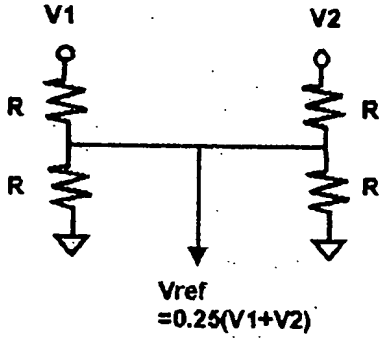


FIG. 11A

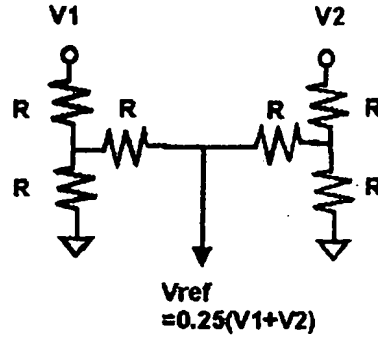


FIG. 11B

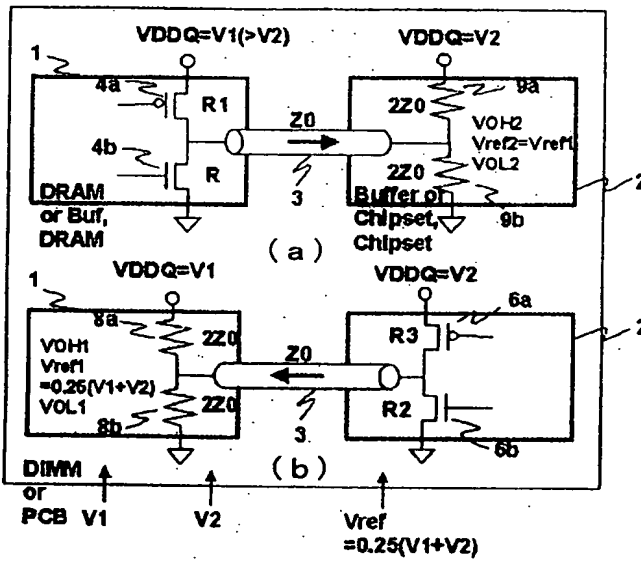


FIG. 12

$$R \leq Z0$$

$$R1 = Z0(V2 \cdot Z0 - V1 \cdot R - V1 \cdot Z0) / (V2 \cdot R - V1 \cdot Z0 - V1 \cdot R)$$

$$VOH2 = (V1 - 0.5V2)Z0 / (R1 + Z0) + 0.5V2$$

$$VOL2 = 0.5V2 \cdot R / (Z0 + R)$$

$$R3 \leq Z0$$

$$R2 = Z0(V1 \cdot Z0 + V2 \cdot R3 - V2 \cdot Z0) / (V1 \cdot R3 + V2 \cdot Z0 - V2 \cdot R3)$$

$$VOH1 = (V2 - 0.5V1)Z0 / (R3 + Z0) + 0.5V1$$

$$VOL1 = 0.5V1 \cdot R2 / (R2 + Z0)$$

$$V_{ref} = V_{ref2} = 0.25(V1+V2)$$

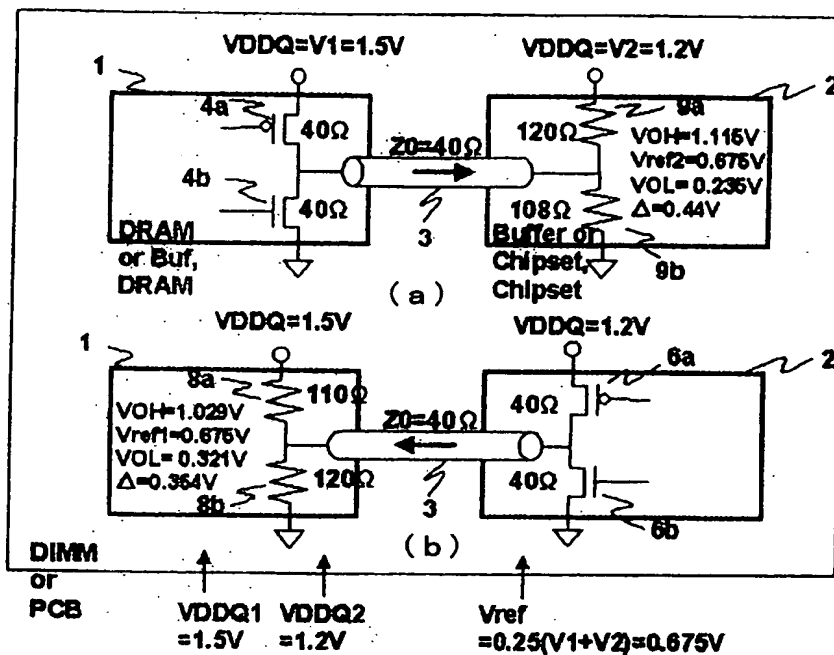
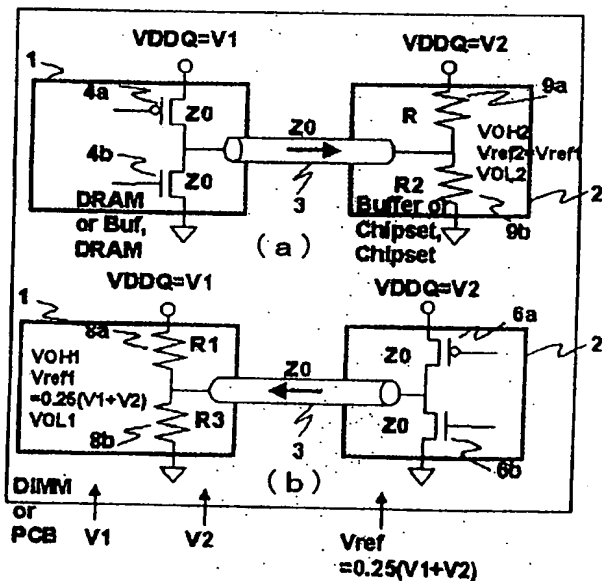


FIG. 13



$$R \geq 2Z0$$

$$R2 = R \cdot Z0(V1+V2) / (V1 \cdot R + 3V2 \cdot Z0 - V1 \cdot Z0 - V2 \cdot R)$$

$$VOH2 = (R \cdot R2 \cdot V1 + R2 \cdot Z0 \cdot V2) / (Z0 \cdot R + R2 \cdot R + R2 \cdot Z0)$$

$$VOL2 = R2 \cdot Z0 \cdot V2 / (Z0 \cdot R2 + R \cdot R2 + R \cdot Z0)$$

$$R3 \geq 2Z0$$

$$R1 = R3 \cdot Z0(3V1 - V2) / (V1 \cdot R3 + V1 \cdot Z0 - V2 \cdot R3 + V2 \cdot Z0)$$

$$VOH1 = (R3 \cdot R1 \cdot V2 + R3 \cdot Z0 \cdot V1) / (Z0 \cdot R1 + R1 \cdot R3 + R3 \cdot Z0)$$

$$VOL1 = R3 \cdot Z0 \cdot V1 / (Z0 \cdot R1 + R3 \cdot R1 + R3 \cdot Z0)$$

$$Vref = Vref2 = 0.25(V1+V2)$$

FIG. 14

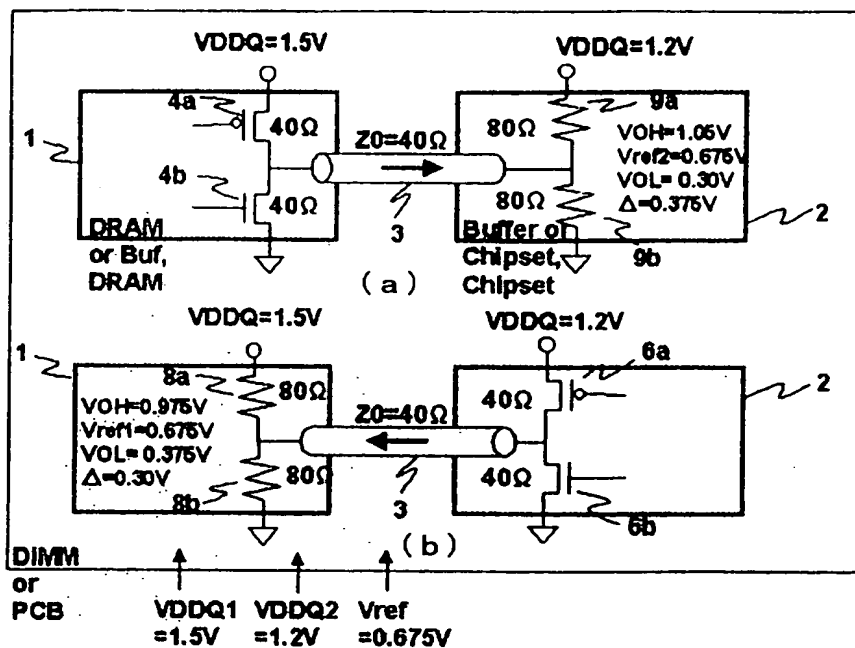


FIG. 15

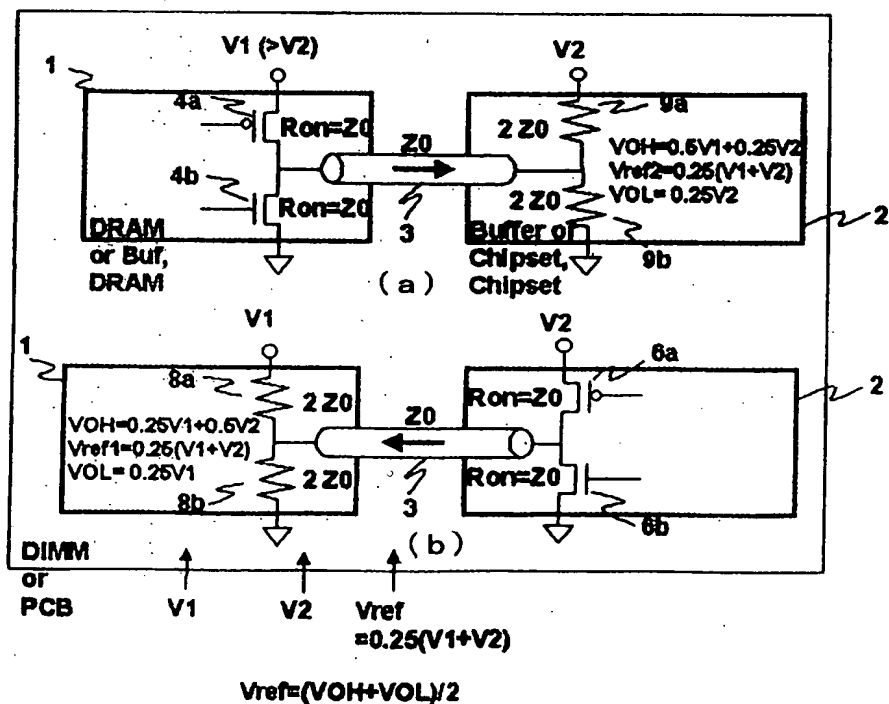


FIG. 16

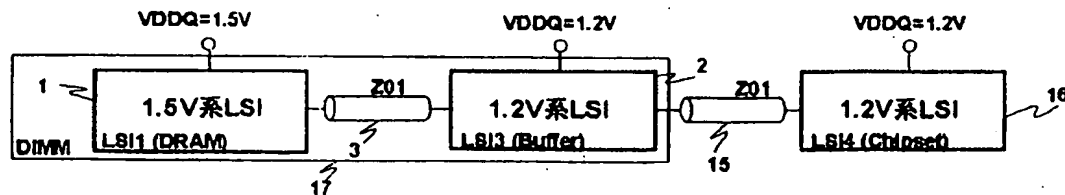


FIG. 17A

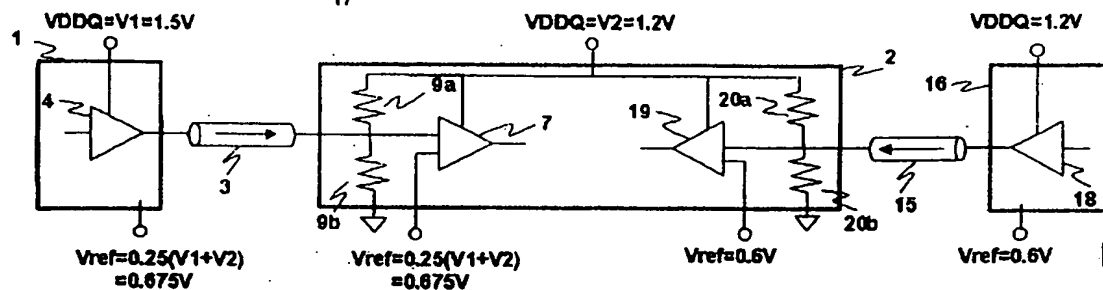


FIG. 17B

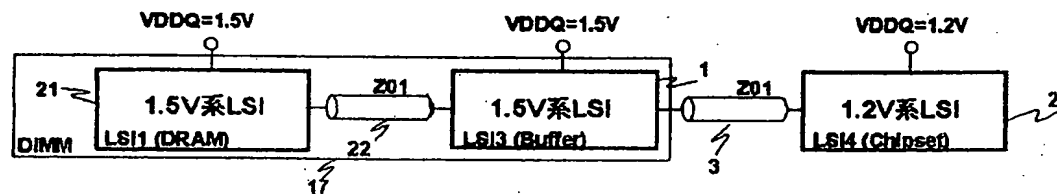


FIG. 18A

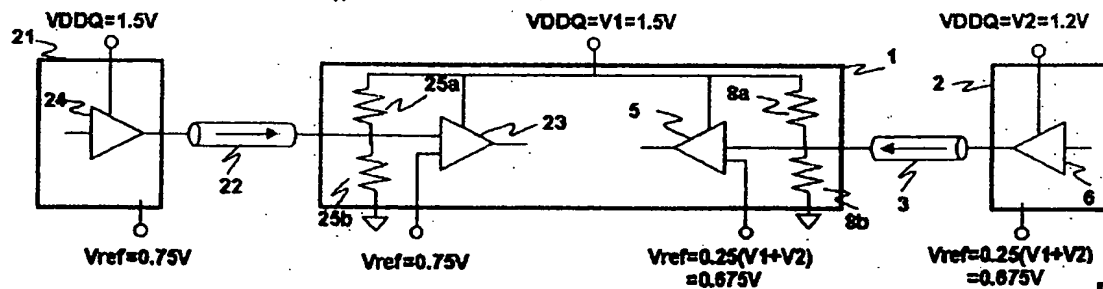


FIG. 18B

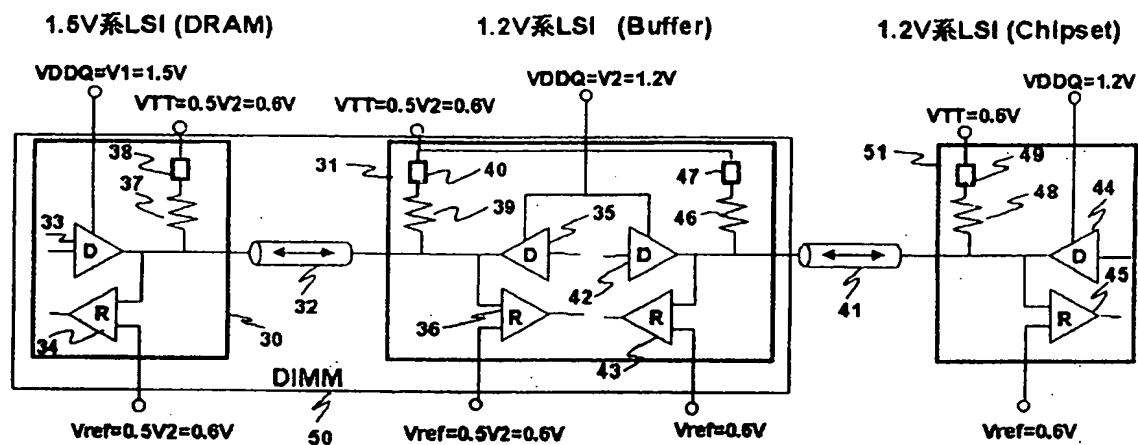


FIG. 19

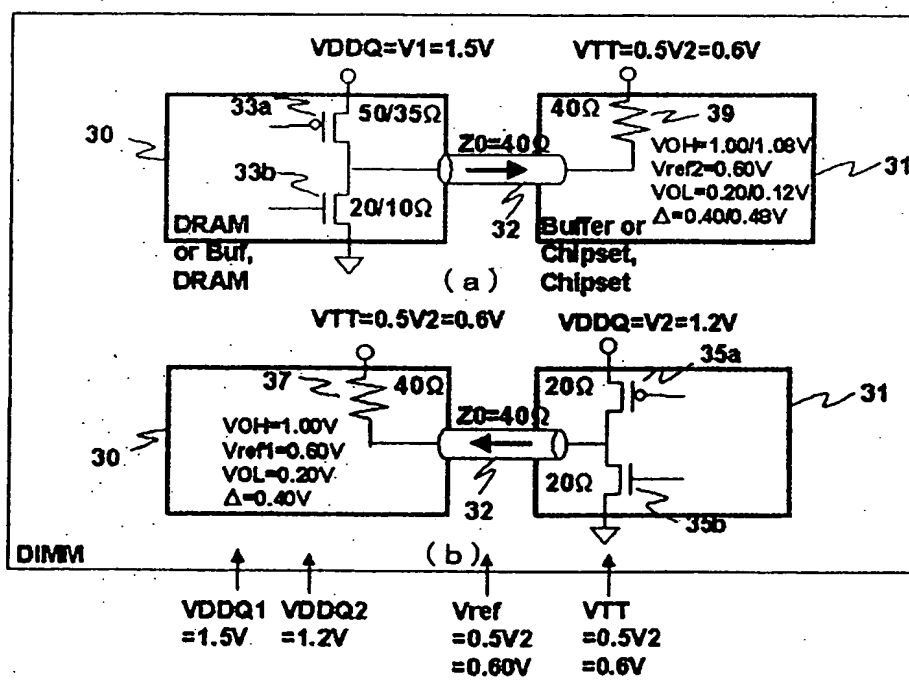
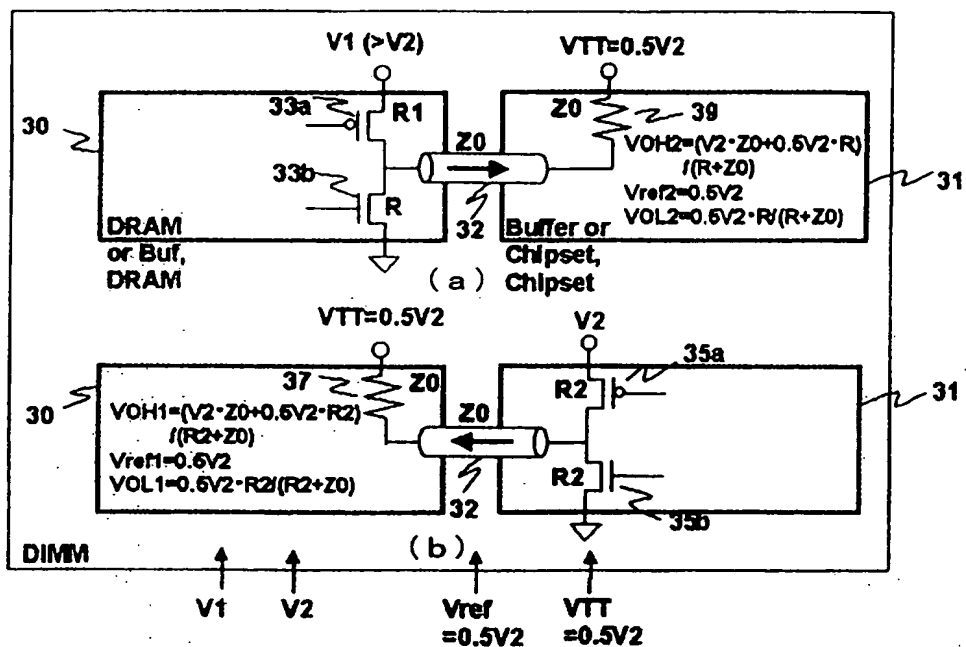


FIG. 20



$$R1 = 2V1(R + Z0) / V2 - (2Z0 + R) \quad \text{FIG. 21}$$

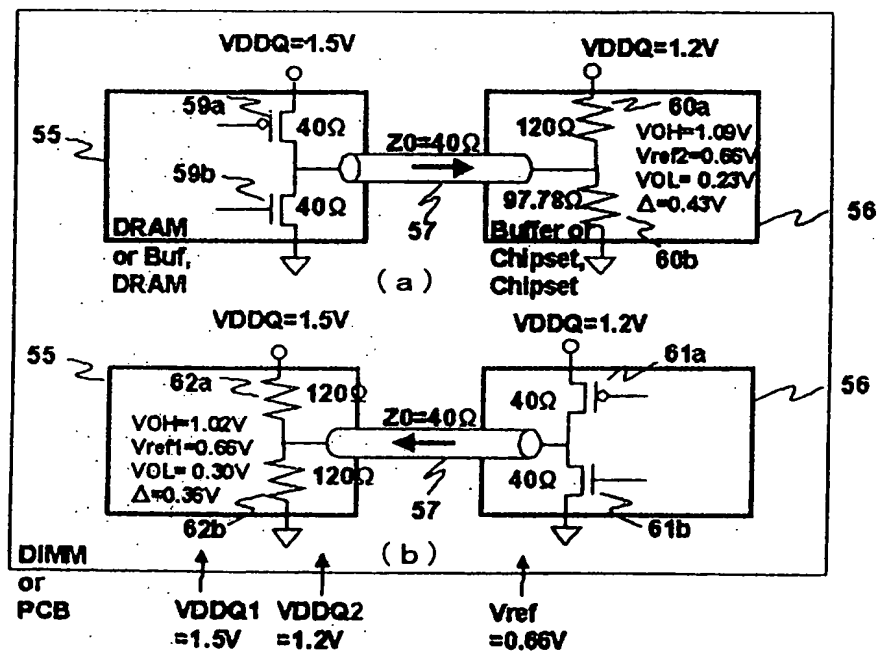
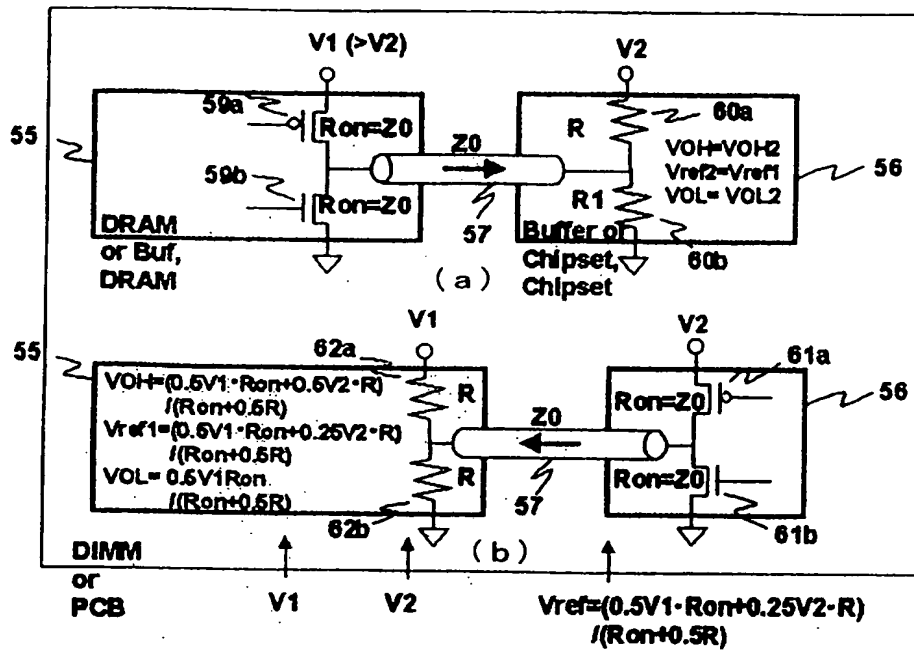


FIG. 22



$$R1 = 2R \cdot R_{on} (V1 \cdot R_{on} + 0.5V2 \cdot R) / (V2 \cdot R \cdot R_{on} + R \cdot R \cdot V1 + 4R_{on} \cdot R_{on} \cdot V2 \cdot R \cdot R \cdot V2 - 2R_{on} \cdot R_{on} \cdot V1)$$

$$VOH2 = (R \cdot R1 \cdot V1 + R1 \cdot R_{on} \cdot V2) / (R \cdot R1 + R1 \cdot R_{on} + R \cdot R_{on})$$

$$VOL2 = R1 \cdot R_{on} \cdot V2 / (R \cdot R1 + R \cdot R_{on} + R1 \cdot R_{on})$$

FIG. 23

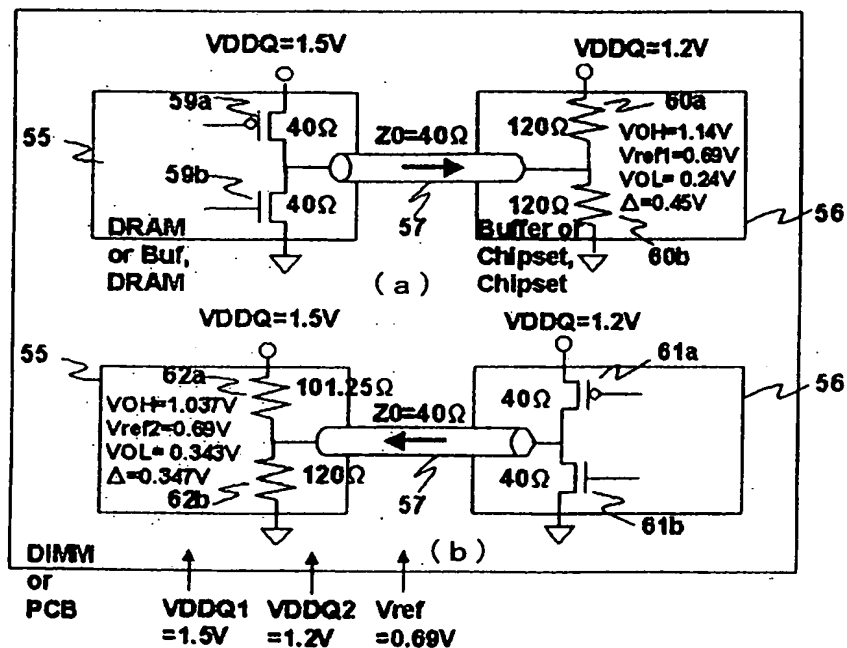


FIG. 24

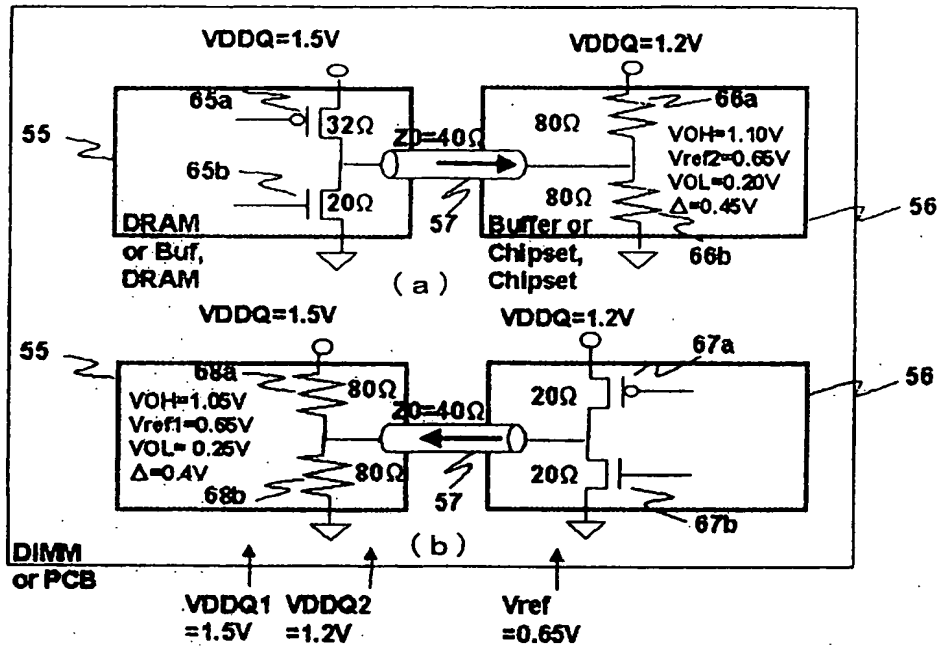
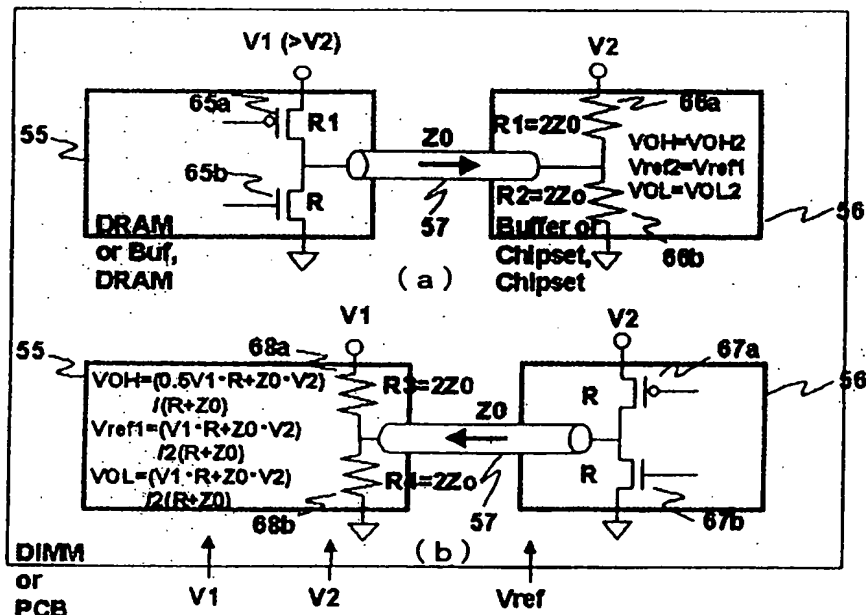


FIG. 25



$$R1 = \frac{(V1 \cdot Z0 - Z0 \cdot V2 \cdot Z0 - Z0 + 0.5V2 \cdot Z0 - R)}{(V1 \cdot R + 0.5V2 \cdot Z0 - V2 \cdot R)}$$

$$VOH2 = \frac{(0.5V2 \cdot R + V1 \cdot Z0)}{(R1 + Z0)}$$

$$VOL2 = \frac{0.5V2 \cdot R}{(R1 + Z0)}$$

FIG. 26

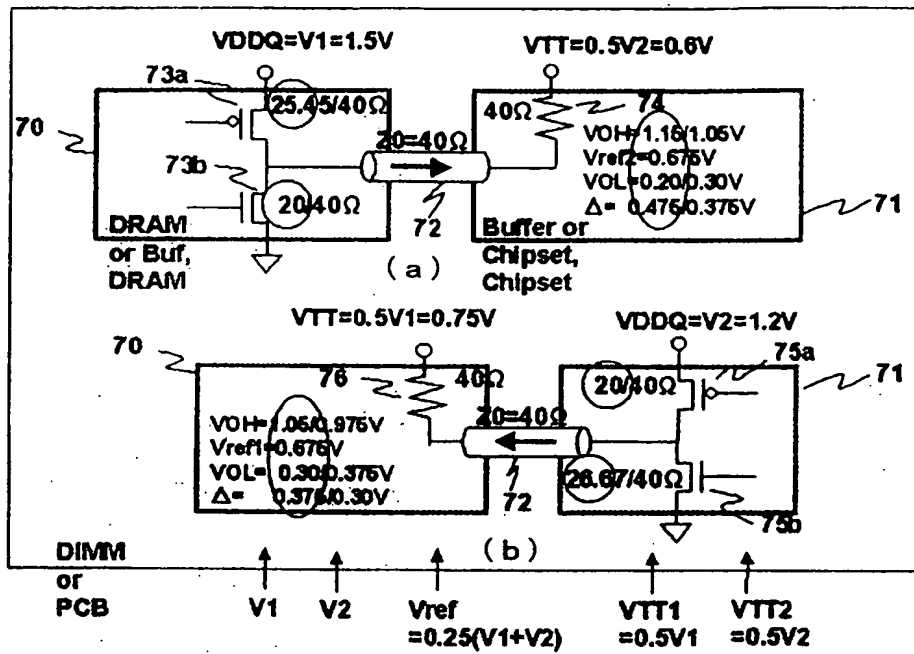


FIG. 27

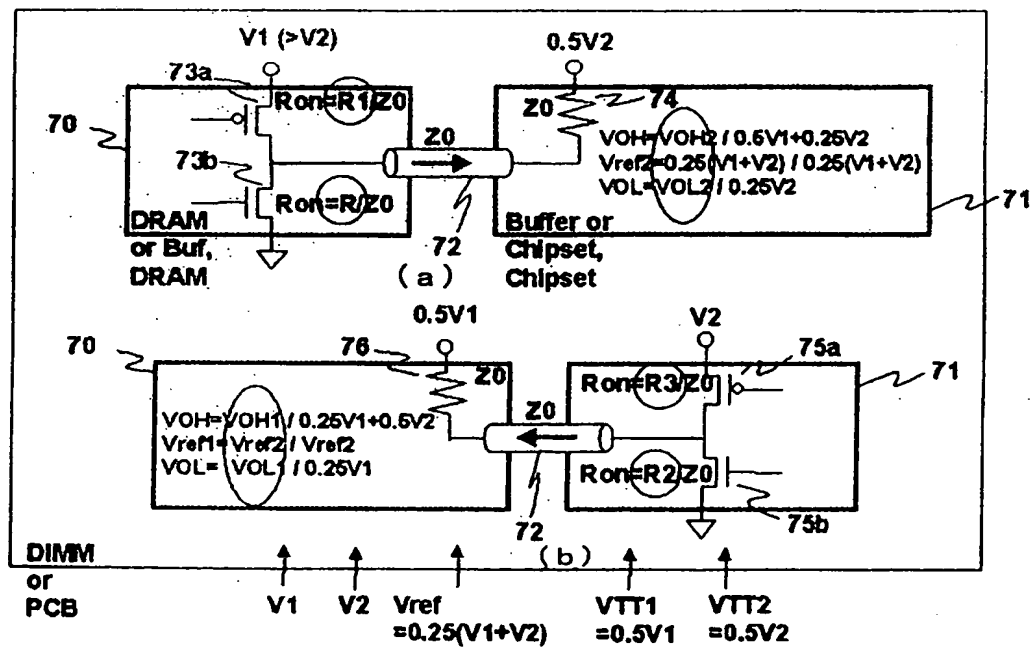


FIG. 28

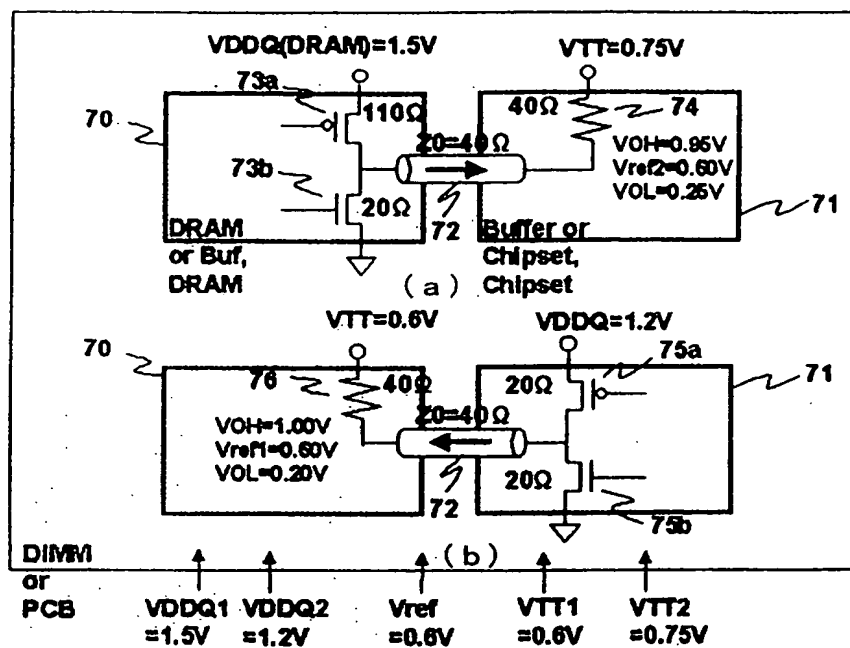


FIG. 29

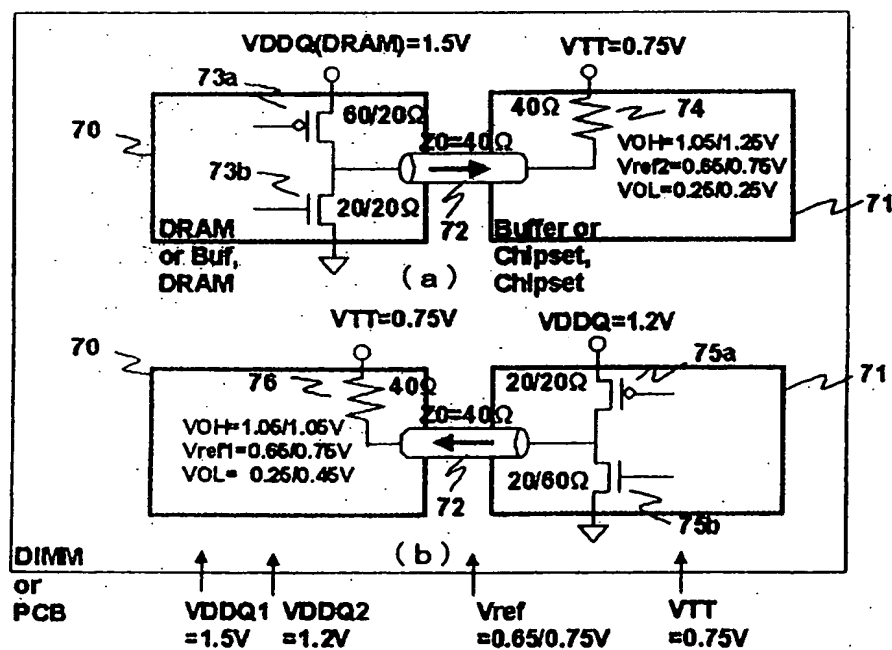


FIG. 30

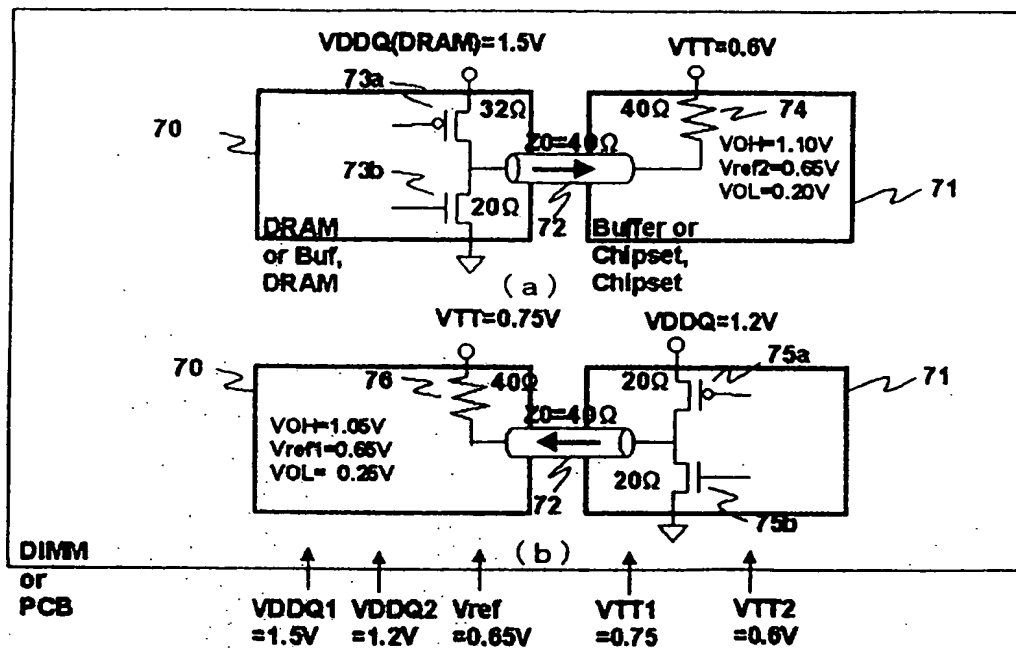


FIG. 31

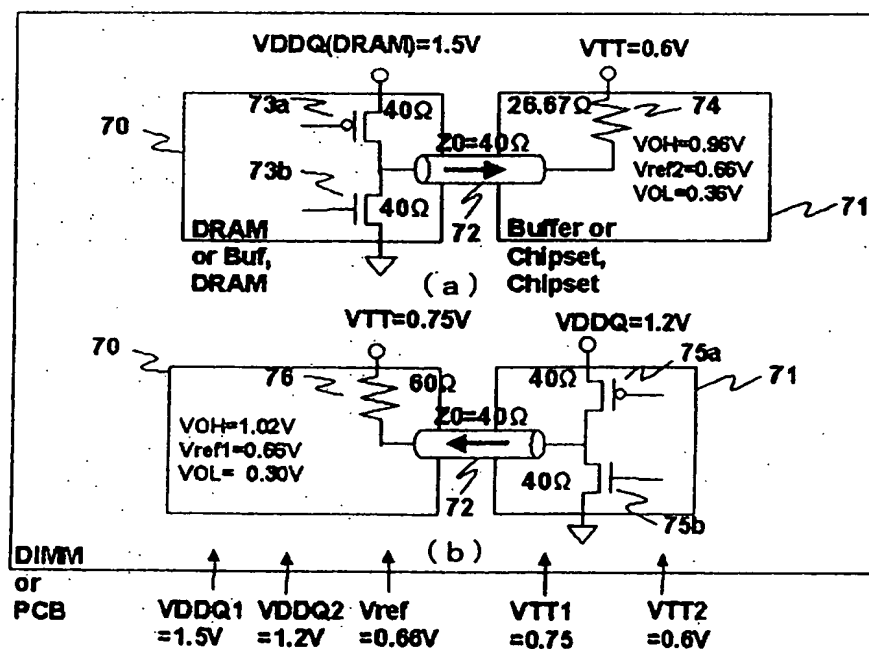


FIG. 32

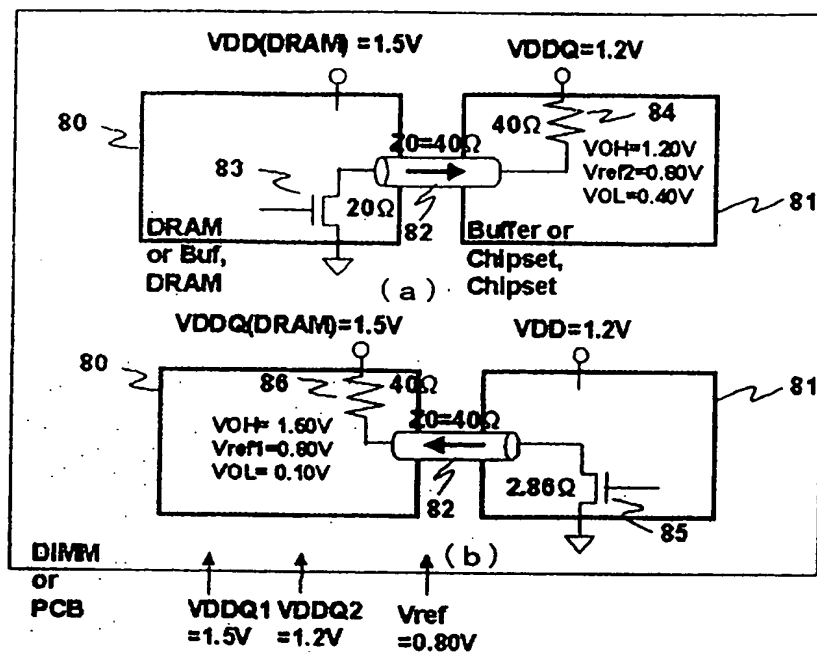


FIG. 33

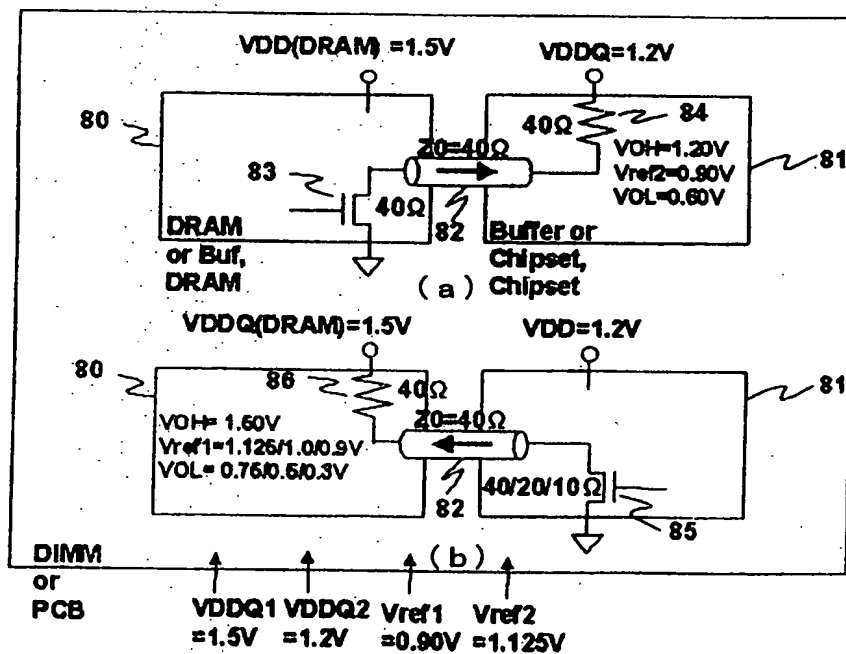


FIG. 34

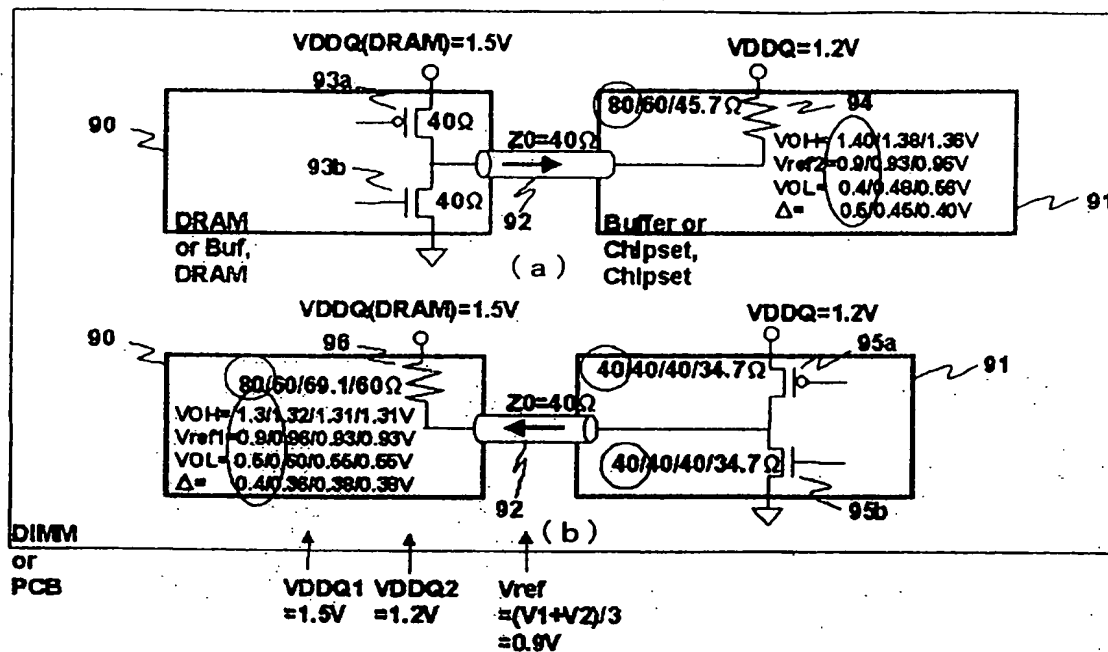


FIG. 35

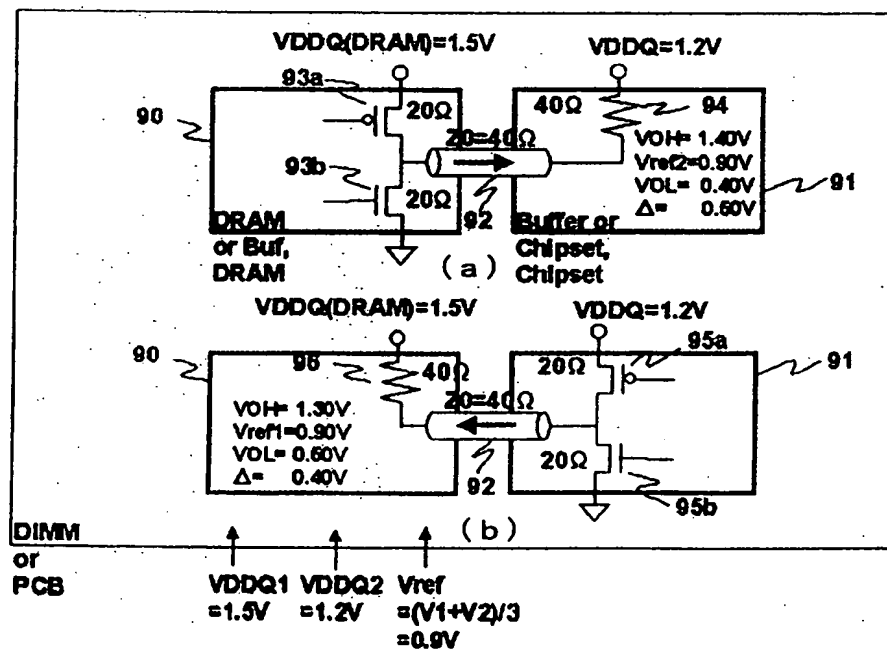


FIG. 36

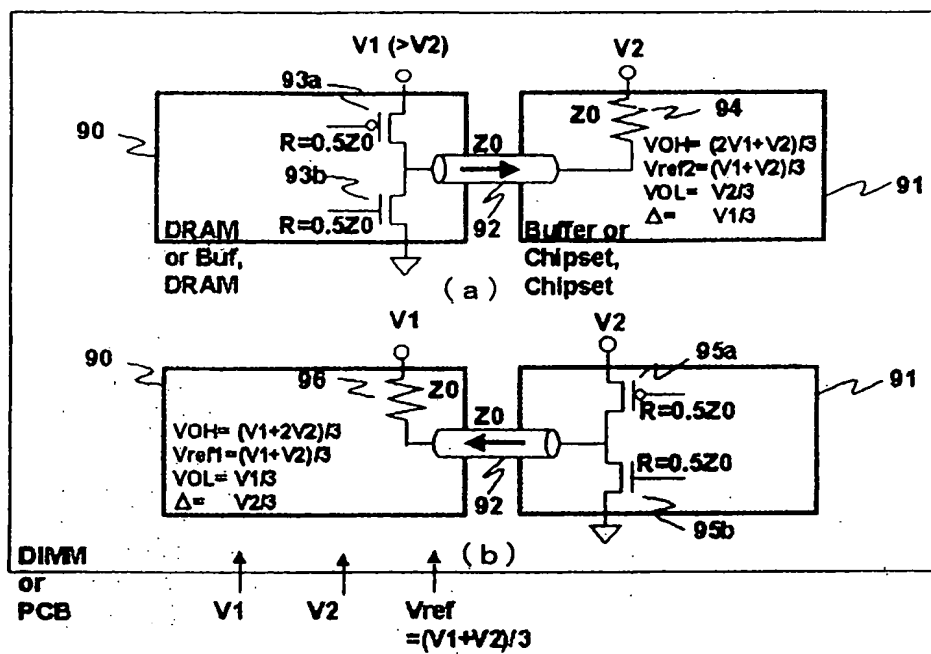


FIG. 37

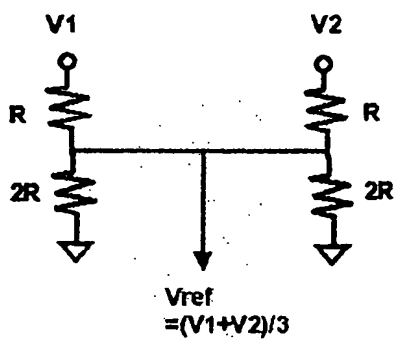


FIG. 38 A

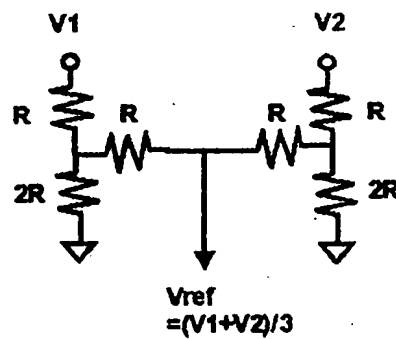


FIG. 38 B

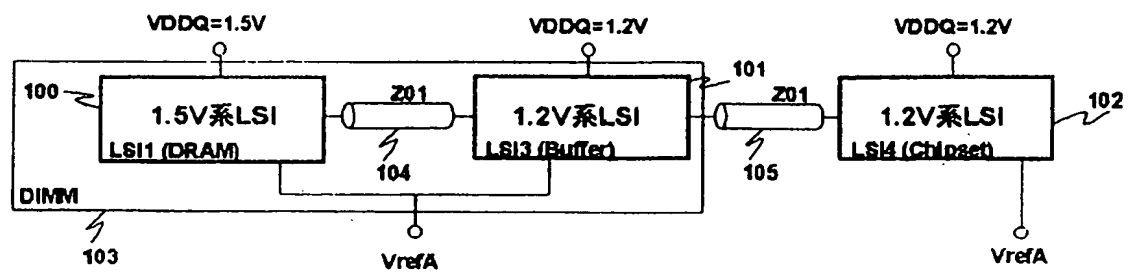


FIG. 39

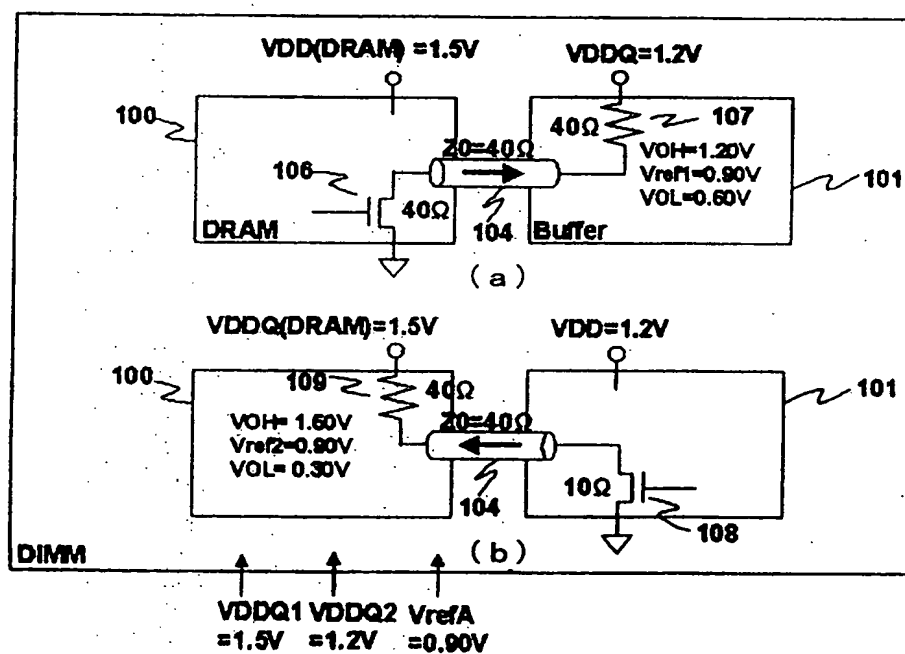


FIG. 40

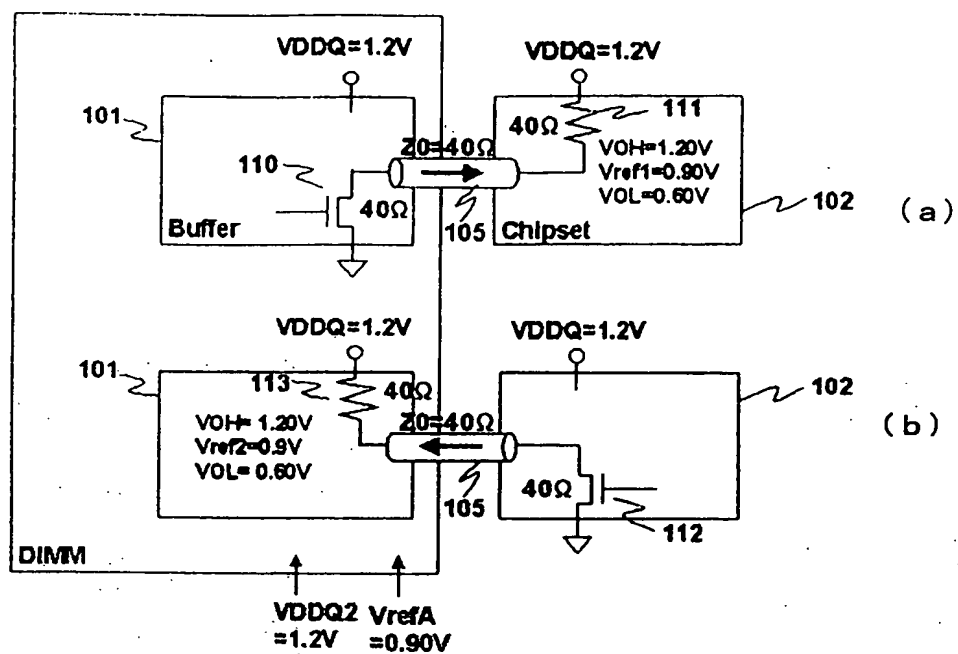


FIG. 41

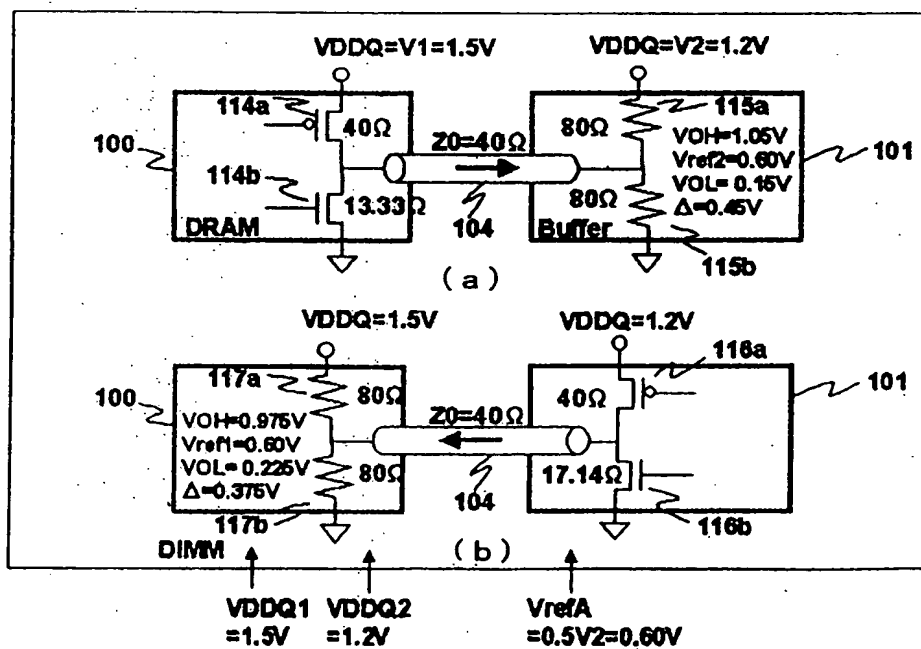


FIG. 42

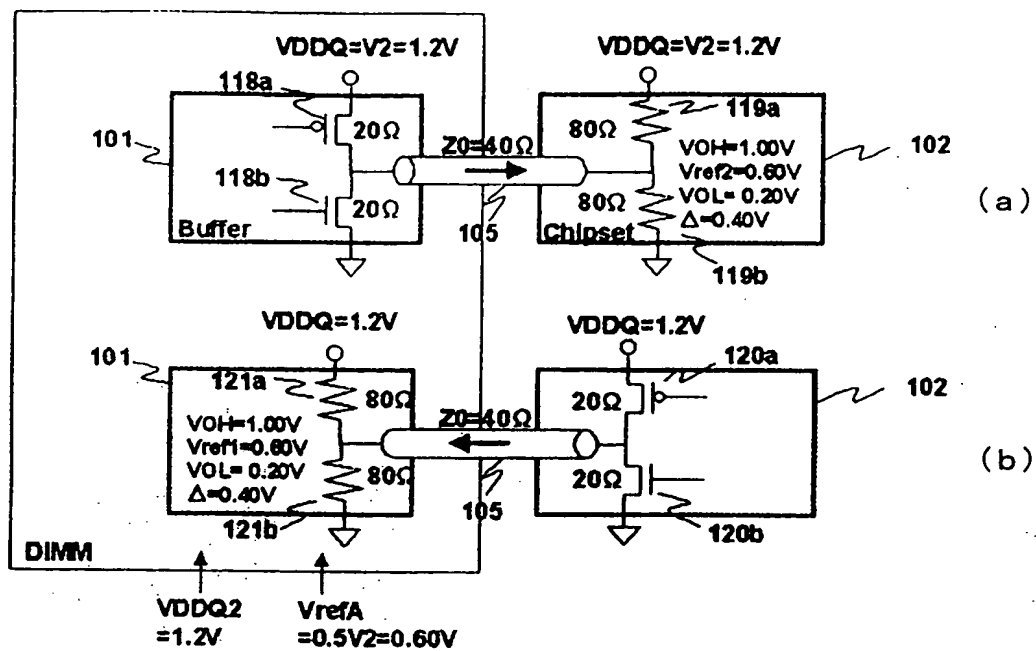


FIG. 43

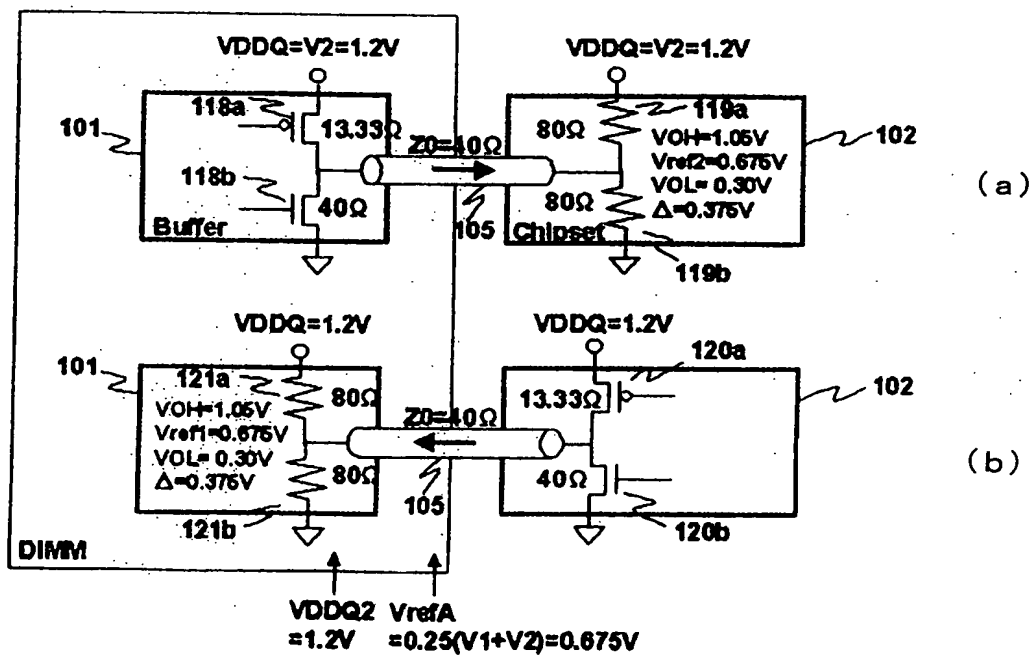


FIG. 44

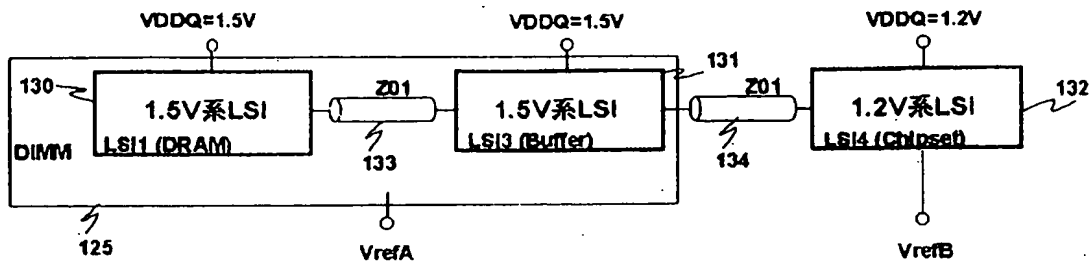


FIG. 45

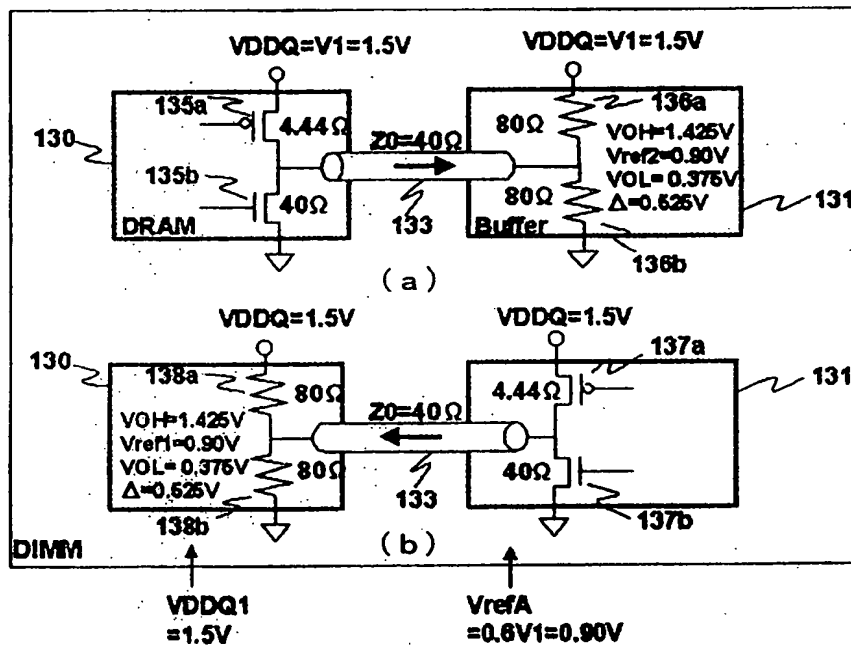


FIG. 46

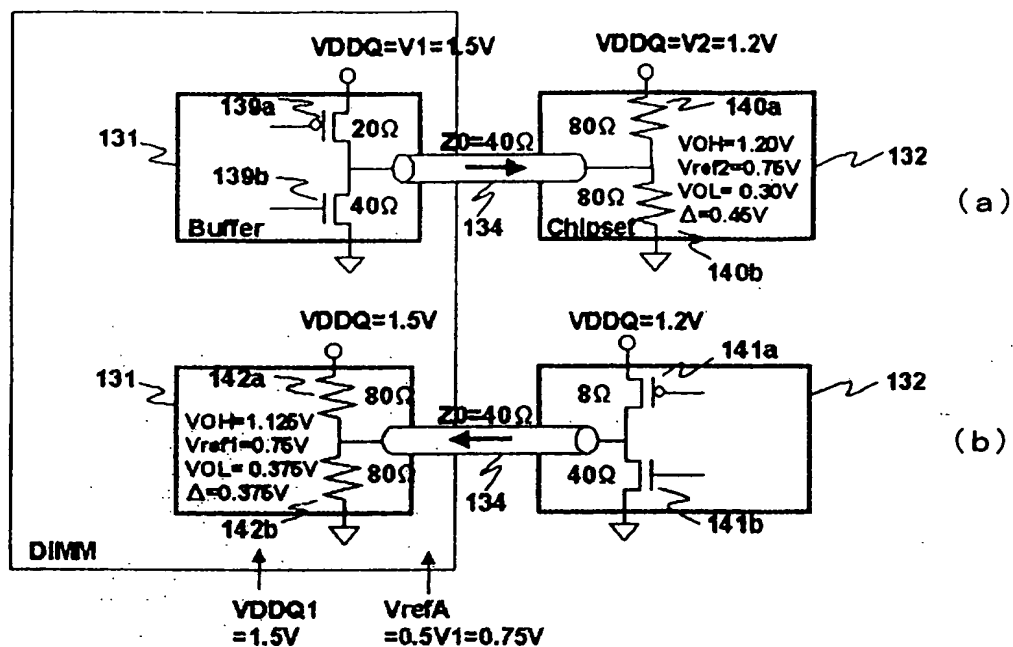


FIG. 47

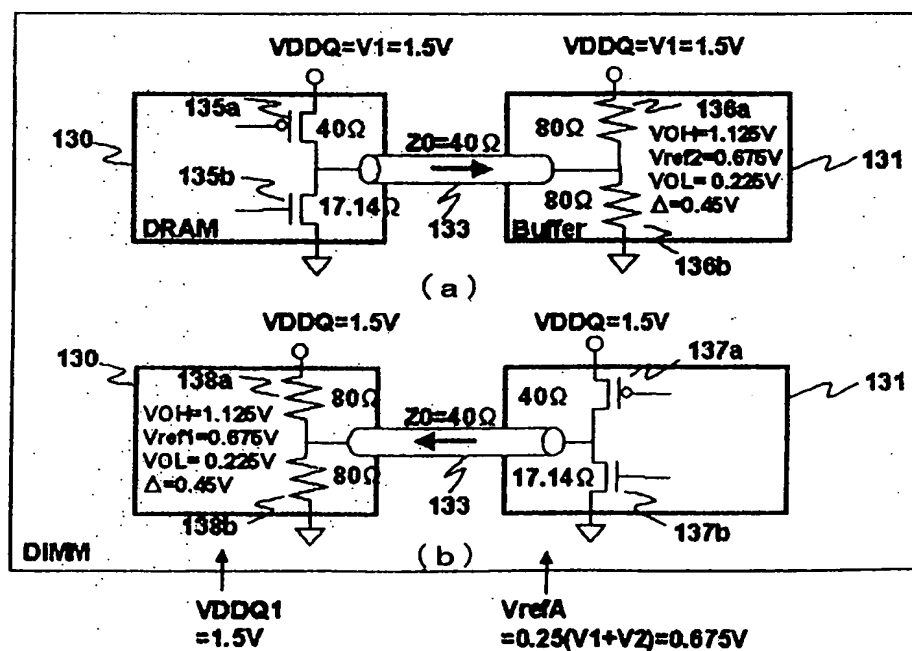


FIG. 48

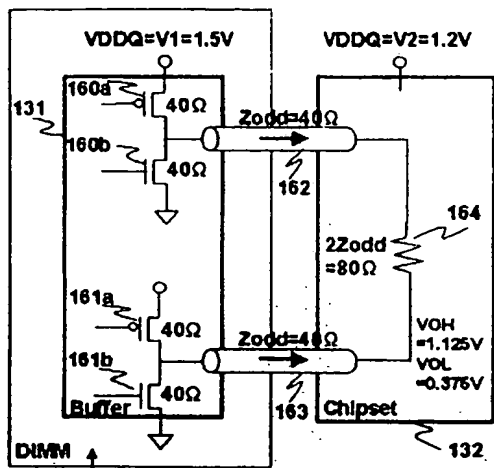


FIG. 49A

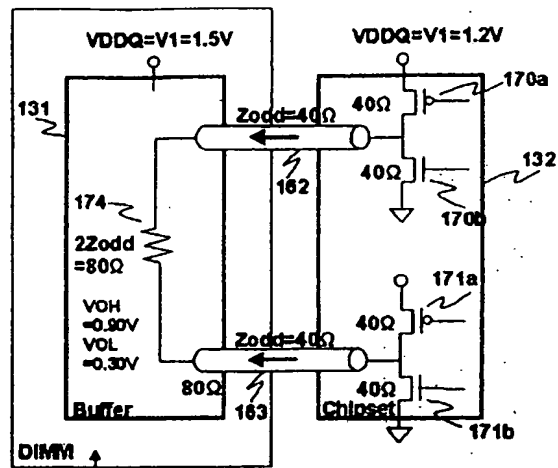
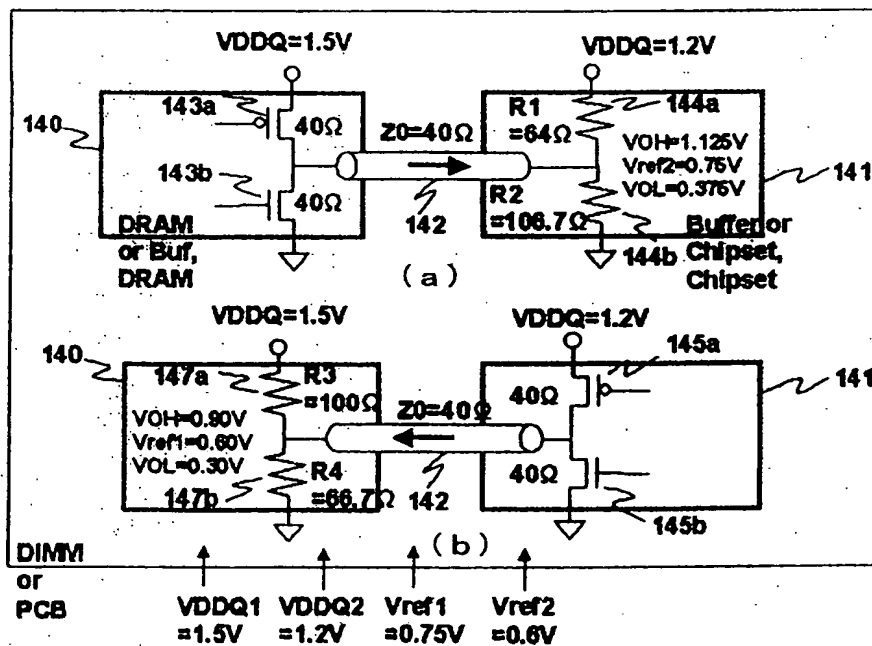
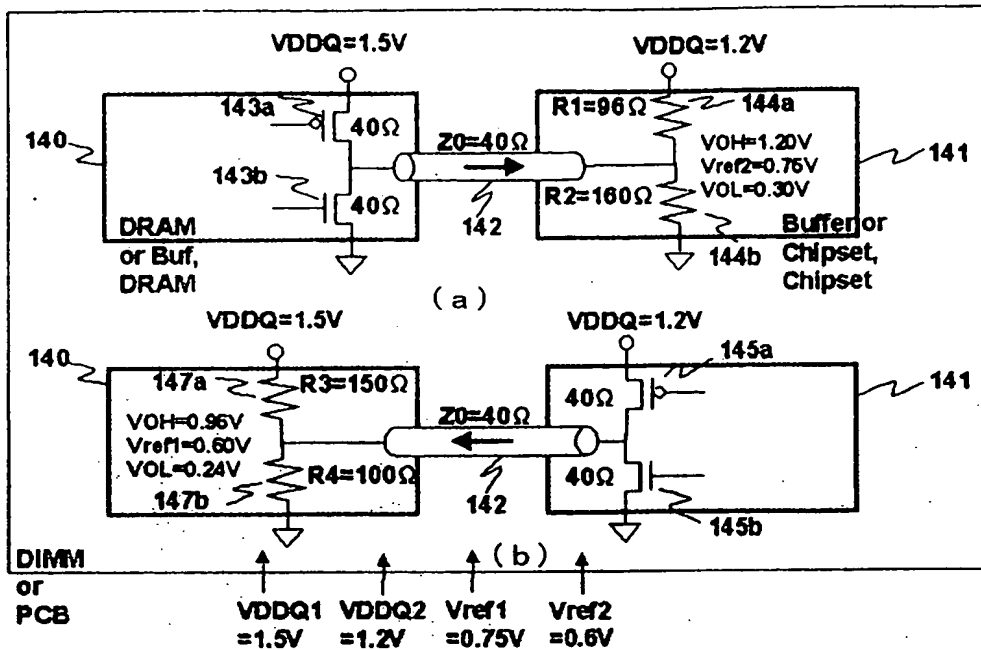


FIG. 49B



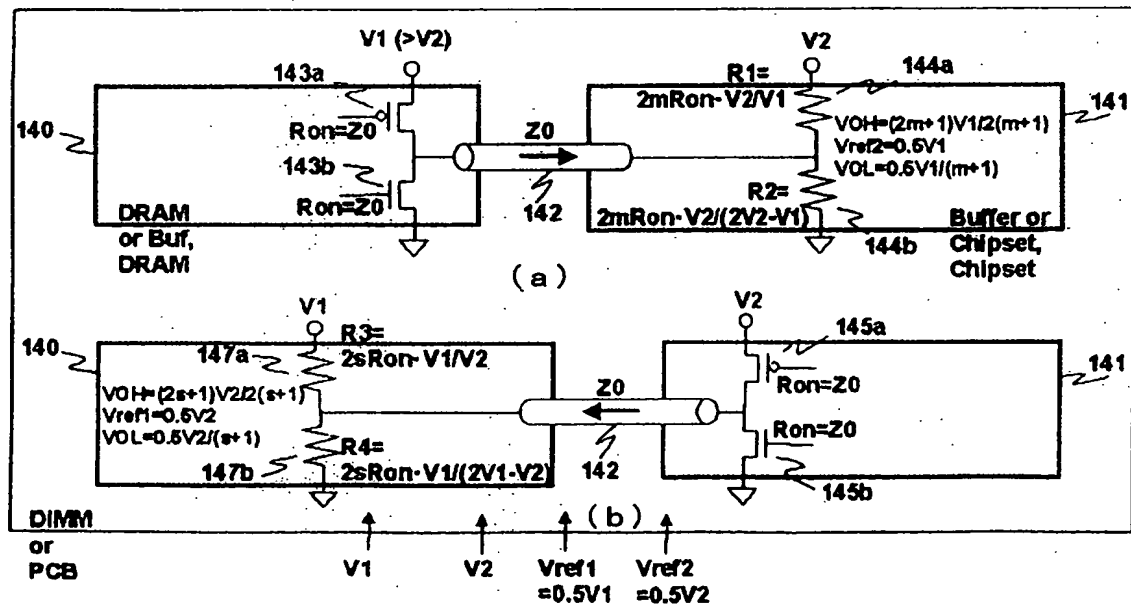
$$m = (R1/R2)/Z0 = s = (R3/R4)/Z0 = 1.0$$

FIG. 50



$$m = (R1 // R2) / Z0 = s = (R3 // R4) / Z0 = 1.5$$

FIG. 51



$$m = (R1 // R2) / Z0$$

$$s = (R3 // R4) / Z0$$

FIG. 52

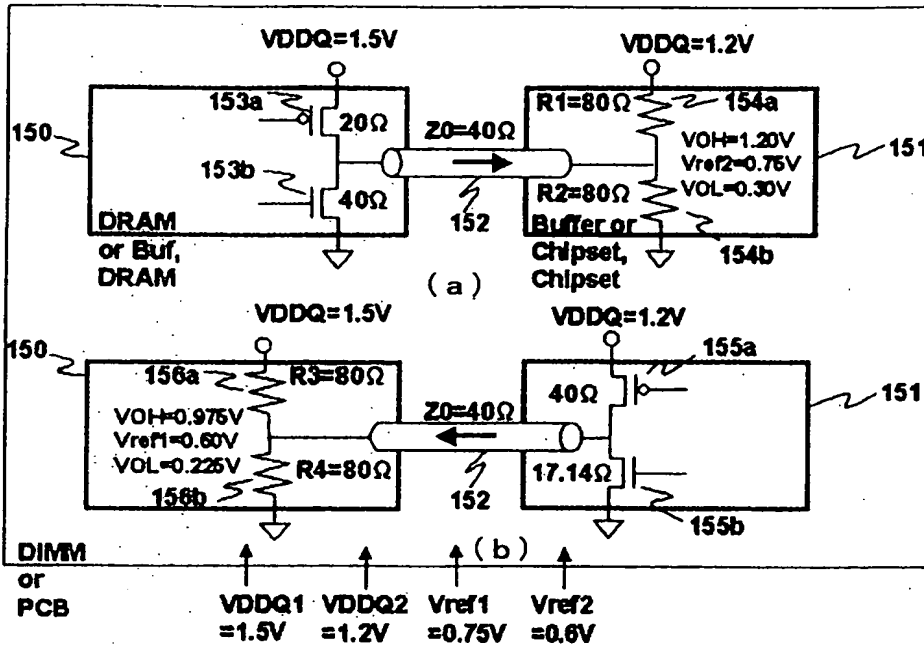


FIG. 53

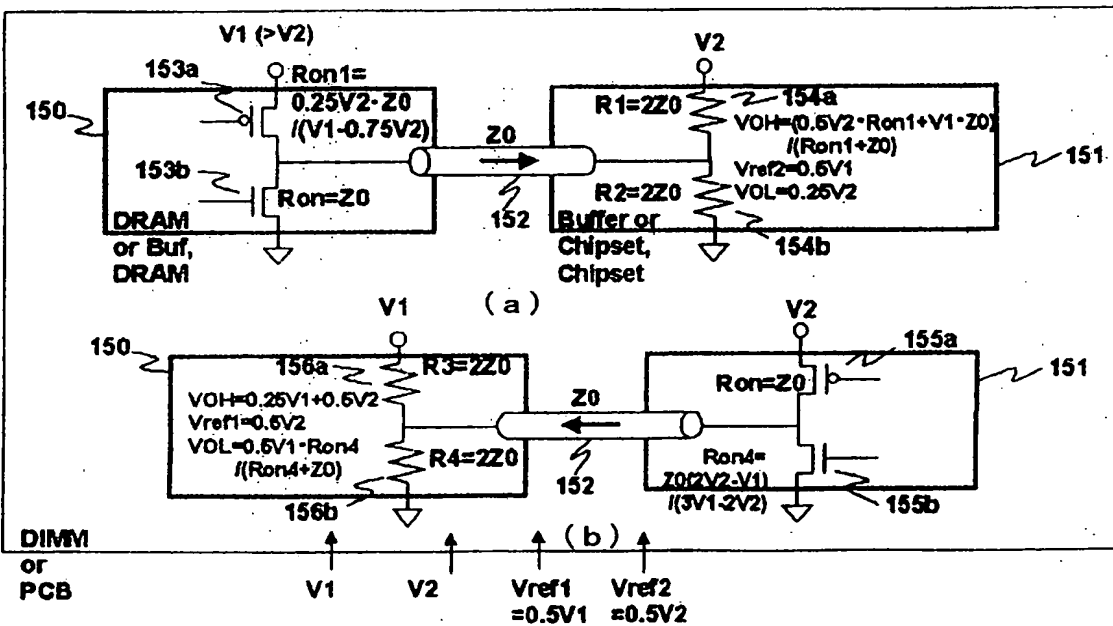


FIG. 54